

## Claims

1. Radically coupled PTFE polymer compounds comprising radiation-chemically and/or plasma-chemically modified PTFE powders, on the particle surfaces of which olefinically unsaturated polymers are chemically radically coupled via a reactive conversion into melt.
2. Radically coupled PTFE polymer compounds according to claim 1, in which the bonding site of the olefinically unsaturated polymers with the PTFE particle surface is randomly distributed on the polymer chain.
3. Radically coupled PTFE polymer compounds according to claim 1, in which the PTFE powder is radiation-chemically modified.
4. Radically coupled PTFE polymer compounds according to claim 3, in which the PTFE powder is radiation-chemically modified with a radiation dose greater than 50 kGy.
5. Radically coupled PTFE polymer compounds according to claim 4, in which the PTFE powder is radiation-chemically modified with a radiation dose greater than 100 kGy.
6. Radically coupled PTFE polymer compounds according to claim 1, in which the PTFE powder is radiation-chemically modified in the presence of reactants.
7. Radically coupled PTFE polymer compounds according to claim 6, in which the PTFE powder is radiation-chemically modified under the influence of oxygen.
8. Radically coupled PTFE polymer compounds according to claim 1, in which the polymers have olefinically unsaturated groups in the main chain and/or in the side chain.
9. Radically coupled PTFE polymer compounds according to claim 1, in which SBS, ABS, SBR, NBR, NR and other butadiene and/or isoprene-homo-, -co- or -ter-polymers are radically coupled as olefinically unsaturated polymers.

10. Method for producing radically coupled PTFE polymer compounds according to one of claims 1 through 9, in which PTFE powders are reactively converted with reactive perfluoroalkyl-(peroxy) radical centers after a radiation-chemical and/or plasma-chemical modification into a melt with the addition of olefinically unsaturated polymers.
11. Method according to claim 10, in which radiation-chemically modified PTFE powder is used.
12. Method according to claim 10, in which the PTFE powder is radiation-chemically modified with a radiation dose greater than 50 kGy.
13. Method according to claim 12, in which the PTFE powder is radiation-chemically modified with a radiation dose greater than 100 kGy.
14. Method according to claim 10, in which the PTFE powder is radiation-chemically modified in the presence of reactants.
15. Method according to claim 14, in which the PTFE powder is radiation-chemically modified under the influence of oxygen.
16. Method according to claim 10, in which the PTFE powder is used as a micropowder.
17. Method according to claim 10, in which the reaction into a melt is realized in a melt mixer.
18. Method according to claim 17, in which the reaction into a melt is realized in an extruder.
19. Method according to claim 10, in which polymers with olefinically unsaturated groups in the main chain and/or in the side chain are used.
20. Method according to claim 10 in which as olefinically unsaturated polymers, SBS, ABS, SBR, NBR, NR and other butadiene- and/or isoprene-homo-, -co- or -ter-polymers are used.